# United States Patent [19]

4,217,237 [11] Aug. 12, 1980 [45] Sartori et al.

[54]	DIOXIDE FROM GA	FOR REMOVING CARBON CONTAINING ACIDIC GASES SEOUS MIXTURES USING A LT ACTIVATED WITH A D AMINE										
[75]	Inventors:	Guido Sartori, Linden, N.J.; Frederic Leder, Corona Del Mar, Calif.										
[73]	Assignee:	Exxon Research & Engineering Co., Florham Park, N.J.										
[21]	Appl. No.:	910,861										
[22]	Filed:	May 30, 1978										
Related U.S. Application Data												
[60]	Division of 4,112,050,	Ser. No. 862,196, Dec. 19, 1977, Pat. No and a continuation-in-part of Ser. No 1. 26, 1975, abandoned.										
[51]	Int. Cl.2	C09K 3/00										
[52]	U.S. Cl											
[58]	Field of Se	252/189, 192, 190 (220, 223, 226–229, 232, 233, 236, 243) 260/564 F										
[56]		References Cited										
	U.S.	PATENT DOCUMENTS										
2,1	83,901 12/19 39,122 12/19	38 Hass et al 260/584 I										

Hass et al. ..... 260/584 R

Hass et al. ..... 260/584 R

2,139,123 12/1938

2,139,124 12/1938

2,176,441 3,637,345 3,793,434 3,856,921 4,096,085	10/1939 1/1972 2/1974 12/1974 6/1978	Ulrich et al
---	--	--------------

# FOREIGN PATENT DOCUMENTS

619193	4/1961	Canada 423/228
1218083	1/1971	United Kingdom 423/228
1306853	2/1973	United Kingdom 423/228

# OTHER PUBLICATIONS

Shrier, "CO2 Absorption Amine-Promoter Potash Solutions," and & Chem. Fundamentals, vol. 8, pp. 415-423, 1969. Dankwerts and Sharma, "The Chemical Engineer"

Oct. 1966, pp. 244-280.

Primary Examiner-Benjamin R. Padgett Assistant Examiner-J. L. Barr Attorney, Agent, or Firm-Albert P. Halluin

### [57] **ABSTRACT**

Carbon dioxide containing acidic gases are removed from a normally gaseous mixture by a process comprising contacting the normally gaseous mixture with an aqueous solution comprising (a) a basic alkali metal salt or hydroxide and (b) an activator for said basic salt or alkali metal salt or hydroxide comprising at least one sterically hindered amine.

# 12 Claims, 4 Drawing Figures

# Title: JP52005679A2: GASUNAGAREKARA NISANKATANSOO JOKYOSURUTAMENOHOHOOYOBI SOSEIBUTSUMETI **ELIMINATING CARBON DIOXIDE FROM GAS STREAM**

© Country: JP Japan

Kind: **A2** (See also: <u>JP01007812B4</u>)

Inventor: DAIDO SARUTORI;
FUREDERITSUKU REDAA;

Assignee: ESSO RES \* ENG CO

News, Profiles, Stocks and More about this company

Published / Filed: 1977-01-17 / 1976-06-25

\* Application JP 1976000074596

IPC Code; Advanced: **B01D 53/14**; **B01D 53/40**; **B01D 53/62**; **B01D 53/77**;

Core: more... IPC-7: **B01D 53/16**; B01D 53/34;

ECLA Code: None

Priority Number: 1975-06-26 US1975000590427

INPADOCNone Buy Now: Family Legal Status Report

Legal Status:

Family:

MY0006583A MY0006483A MY0006383A				N N	NL NL	Z NL	<b>P</b> H	SN	<u>≅U</u> US	Sn 🗷	A) Na US	/: Buy P
		Ш		NL0189750B	NL0189750C	NL7606979A	PH0012585A	US4112050	<u>US4112051</u>	<u>US4112052</u>	US4217237	<u>Publication</u>
1000 120	1983-12-31	1983-12-31	1983-12-31	1993-02-16	1993-07-16	1976-12-28	1979-06-27	1978-09-05	1978-09-05	1978-09-05	1980-08-12	Pub. Date
	1983-12-31	1983-12-31	1983-12-31	1976-06-25	1976-06-25	1976-06-25	1976-06-23	1977-12-19	1977-12-19	1977-12-19	1978-05-30	Filed
	1983-12-31 1983-12-31 A LIQUID COMPOSITION USEFUL IN REMOVING AN ACIDIC GAS FROM A GASEOUS MIX	1983-12-31 1983-12-31 PROCESS AND COMPOSITIONS FOR THE REMOVING OF CARBON DIOXIDE FROM GAS	1983-12-31 1983-12-31 A LIQUID COMPOSITION USEFUL IN REMOVING AN ACIDIC GAS FROM A GASEOUS MIX	1993-02-16 1976-06-25 WERKWIJZE VOOR HET VERWIJDEREN VAN CO 2 UIT EEN GASMENGSEL.	1993-07-16 1976-06-25 WERKWIJZE VOOR HET VERWIJDEREN VAN CO 2 UIT EEN GASMENGSEL.	1976-12-28 1976-06-25 WERKWIJZE TER VERWIJDERING VAN CO2 UIT GAS- MENGSELS.	1979-06-27 1976-06-23 PROCESS AND COMPOSITIONS FOR THE REMOVING OF CARBON DIOXIDE FROM GAS	1978-09-05 1977-12-19 Process for removing carbon dioxide containing acidic gases from gaseous mixtures using a ba	1978-09-05 1977-12-19 Process and amine-solvent absorbent for removing acidic gases from gaseous mixtures	1978-09-05 1977-12-19 Process for removing carbon dioxide containing acidic gases from gaseous mixtures using aqui	980-08-12 1978-05-30 Process for removing carbon dioxide containing acidic gases from gaseous mixtures using a ba	Title

22	図	Q	図	S	区	図	図	国	团	团		図	S		国	図	国
29 family members shown above	AU0506199B2	AU1480076A1	CA1081917A1	DE2628376A1	DE2628376C2	FR2316999A1	FR2316999B1	GB1567943A	GB1567944A	GB1567945A	IT1061456A	JP01007812B4	JP01034092B4	JP01159021A2 1989-06-22	JP04008089B4 1992-02-14 1988-10-19	<b>JP52005679A2</b> 1977-01-17 1976-06-25	JP61071819A2
s shown abo	1979-12-20	1977-12-15	1980-07-22	1977-01-13	1990-10-04	1977-02-04	1982-09-17 1976-06-25	1980-05-21	1980-05-21	1980-05-21	1983-02-28	1989-02-10 1976-06-25	1989-07-18 1985-06-26	1989-06-22	1992-02-14	1977-01-17	1986-04-12
Ve	979-12-20 1976-06-10	1977-12-15 1976-06-10	1980-07-22 1976-06-11	1977-01-13 1976-06-24	1976-06-24	1977-02-04 1976-06-25	1976-06-25	1980-05-21 1976-06-28	1980-05-21 1976-06-28	1980-05-21 1976-06-28		1976-06-25					1985-06-26
	ABSORBTION OF CO2 FROM GASEOUS FEEDS	REMOVING CARBON DIOXIDE FROM GAS STREAMS	PROCESS AND COMPOSITIONS FOR THE REMOVING OF CARBON IDE FROM GAS STRI	Entfernung von Kohlendioxid aus Gasen	1990-10-04 1976-06-24 Verfahren zur Entfernung von CO <sub>2</sub> aus gasfoermigen Einsatzprodukten	PROCEDE D'ENLEVEMENT DU DIOXYDE DE CARBONE DE COURANTS GAZEUX		PROCESS AND COMPOSITIONS FOR THE REMOVING OF CARBON DIOXIDE FROM GAS	LIQUID COMPOSITION USEFUL IN REMOVING AN ACIDIC GAS FROM A GASEOUS MIXTL	LIQUID COMPOSITION USEFUL IN REMOVING AN ACIDIC GAS FROM A GASEOUS MIXTL		RITSUTAISHOGAIAMINOGANJUSURUSUISEIKYUSHUYOEKIOSHOSHITEGASUNAGAREK	SANSEIGASUSUKURATSUBINGUYOSOSEIBUTSU		RITSUTAISHOGAIAMINOGANJUSURUHISUISEIKYUSHUYOEKIOSHOSHITEGASUNAGARI	GASUNAGAREKARA NISANKATANSOO JOKYOSURUTAMENOHOHOOYOBI SOSEIBUTSL	JP61071819A2 1986-04-12 1985-06-26 SANSEIGASUSUKURATSUBINGUYOSOSEIBUTSU

Other Abstract CHEMABS 087(14)103824X
 Info: